EX PARTE OR LATE FILED

Ad Hoc Alliance for Public Access to 911

Alliance for Technology Access•Arizona Consumers League•National Consumers League•World Institute on Disability•National Emergency Number Association-California Chapter•Crime Victims United•Justice for Murder Victims•California Cellular Phone Owners Association•Florida Consumer Fraud Watch•Center for Public Interest Law•Consumer Action•Consumer Coalition of California•Consumers First•California Alliance for Consumer Protection•Californians Against Regulatory Excess•The Office of Communication of the United Church of Christ•Utility Consumer Action Network•Children's Advocacy Institute

DOCKET FILE COPY ORIGINAL

September 23, 1996

MEMORANDUM

TO: Michele Farquhar
John Cimko

FROM: Jonathan D. Linkous

RE: Material From the Alliance For Discussion At Meeting
FCC Docket 94-102

Included here are several items that will be discussed during our meeting with Michele Farquhar on September 26 regarding Wireless Access to 911 as contained within FCC Docket 94-102:

1. A report from Trott Communications Group about: a.) problems with interoperability for 911 calls between different types of mobile communications systems and b.) how equipment manufacturers can easily implement the strongest compatible system requirements for placing 911 calls. Also included are the EIA/TIA standards that are referred to in the Trott report.

2. A cellular system coverage survey of the Atlanta, Georgia and Dallas, Texas showing holes in the coverage of the signal strength throughout the areas.

3. Information detailing how 911 calls made from both distant roamers and non-service initialized phones can be returned. It occurred to us after our meeting that future call-backs for 911 calls made from cellular phones that are based in another city (roaming) may require a long distance call from the PSAP and may not be able to be connected at all. This will be true even for phones that are currently initialized, subscribed and with a min. The paper proposes a solution to that problem as well.

We look forward to meeting with you.

cc: Mr. William F. Caton, Secretary

TROTT
COMMUNICATIONS GROUP

RECEIVED

SEP 2 3 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

FEASIBILITY OF SELECTING THE STRONGEST COMPATIBLE CELLULAR SIGNAL

REPORT PREPARED FOR

AD HOC ALLIANCE FOR PUBLIC ACCESS TO 9-1-1

BY

TROTT COMMUNICATIONS GROUP, INC.

AUGUST 27, 1996

INTRODUCTION:

The Ad Hoc Alliance for Public Access to 9-1-1 (Alliance) has proposed that the Commission adopt a rule change that will require all wireless handsets to automatically select the strongest compatible signal when the user dials 9-1-1. Under the Alliance proposal, the process of selecting the strongest signal will automatically eliminate incompatible signals. This proposal is easily achievable and will impose a minimal burden on manufacturers compared to the benefits provided to the user.

The Commission has also asked for comment concerning ways for mobile users to complete a 9-1-1 call to any available wireless system without regard to system compatibility. In consideration of this issue, it is impractical to require wireless handset manufacturers to support a multitude of frequency bands, modulation types, signaling formats and protocols. It is equally impractical to require wireless service providers to construct systems to support a multitude of frequency bands, modulation types, signaling formats and protocols. It is even more impractical from the Commission's standpoint to re-assign spectrum in each frequency band from one wireless service provider to several competing wireless service providers to support such activities. Due to these impracticalities, this report will address 9-1-1 access only from a cellular perspective.

As a practical matter, most cellular carriers will ensure inter-system compatibility to offer roaming service in order to remain competitive in the marketplace. This will require such service providers to continue to dedicate some spectrum to analog service and handset manufacturers to produce dual-mode analog/digital equipment to accommodate the needs of the roaming subscriber. Thus, a 9-1-1 call can be switched to the strongest, compatible (analog or digital) signal.

GENERAL:

Cellular handsets are designed, manufactured and programmed in compliance with appropriate industry standards to ensure compatibility between the Mobile Station (MS) and Base Station (BS). These standards were prepared by Electronic Industries Association (EIA) and Telecommunications Industry Association (TIA) and published as EIA/TIA Standards. These Standards were reviewed and approved by the F.C.C. and incorporated into their Rules and Regulations by reference. The majority of the cellular handsets in service today are compatible with the original OST-53 analog standard (AMPS). Some are also compatible with one of the digital standards.

Unlike other wireless services, Cellular Radio Telephone Service was initially implemented using analog technology and some systems were subsequently upgraded to one of the standardized digital technologies. In order to retain compatibility with the existing subscriber base and to remain compatible with all other cellular providers in providing roamer service, cellular service providers are retaining analog service; i.e., some channels operate in the analog mode while others operate in a digital format (TDMA, CDMA). In addition, cellular subscriber units are being manufactured as dual-mode; i.e., analog and digital. As a result, most cellular handsets will continue to be compatible with current cellular systems in the analog (AMPS) mode of operation.

COMPATIBILITY ISSUES:

The nationwide deployment of digital cellular is not following a single standard as was the deployment of analog cellular. In some cities, one cellular provider is implementing TDMA in addition to analog while the other is implementing CDMA in addition to analog. In addition, deployment of digital is in isolated areas and not ubiquitous.

The Commission's REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING CC Docket No. 94-102 / RM-8143, specifically Paragraph 146 and related Footnote 288, ignores one of the central and material parts of the Alliance's request, that wireless handsets automatically select the strongest, **COMPATIBLE** signal when the user dials 9-1-1. Cellular handsets will not recognize or "lock-onto" a stronger signal with an incompatible format. For example, a CDMA handset looks for CDMA pilot channels which are totally different from analog control channels and a TDMA handset looks for TDMA digital control channels which are totally different from analog control channels. In addition, analog-only handsets will not recognize either TDMA or CDMA control or pilot channels. Furthermore, digital (dual-mode) phones will search for analog control channels if no compatible digital signaling is found; therefore, a dual-mode handset could, if so directed, search both format-compatible digital control or pilot channels in addition to analog control channels to determine the strongest compatible system. In light of the ubiquitous nature of the analog networks and better audio quality at this time in the deployment process, it may be preferable to place all 9-1-1 calls in the analog portion of the wireless networks. This would also speed up the deployment of handset location due to technical limitations of digital location technology, especially CDMA. Digital technologies are intended to benefit the service providers by increasing capacity in a fixed bandwidth, and may in some future generation, provide close to equal voice quality.

REVIEW OF CURRENT PROCESS:

This review is based upon the original OST-53 compatibility specification since all analog operations are backwards compatible to support the original MS equipment. Upon application of power, the MS in a cellular system will perform the *INITIALIZATION* Task (2.6.1) and then enter the *IDLE* Task (2.6.2). The MS will remain in this *IDLE* mode of operation waiting for either a BS or user event. Periodically, the MS will re-scan the cellular environment to ensure itself of current data and accessibility to cellular service.

When the MS user places a call, the MS will exit the *IDLE* task and enter the *SYSTEM ACCESS* Task (2.6.3) with the Origination Flag set. The *SYSTEM ACCESS* Task begins with *SET ACCESS PARAMETERS* Task (2.6.3.1) which defines the basic time allowance for the MS to complete the access attempt. The *SYSTEM ACCESS* Task then continues with the *SCAN ACCESS CHANNELS* Task (2.6.3.2) which instructs the MS to examine the signal strength of ALL control channels beginning with FIRSTCHA and ending with LASTCHA looking for the strongest two channels in the group. The *INITIALIZATION* Task (2.6.1) set the FIRSTCHA and LASTCHA parameters to encompass the control channels associated with the preferred serving system, either the A-Side channel set or the B-Side channel set. Therefore, the MS will only look at the access channels for one of the available cellular service providers in the area.

Once the *SCAN ACCESS CHANNELS* Task completes, the MS is tuned to the strongest channel and the *RETRIEVE ACCESS ATTEMPTS PARAMETER* Task (2.6.3.3) is entered. This task informs the MS as to the allowable number of access attempts it will be permitted to try before access failure is declared. The MS then enters the *UPDATE OVERHEAD INFORMATION* Task (2.6.3.4) to insure compliance with the serving system registration and authentication requirements. The MS will then enter the *SEIZE REVERSE CONTROL CHANNEL* Task (2.6.3.5) where it will attempt to pass the Origination request to the serving system.

The processing of this origination call will remain with the selected serving system until call termination or until the serving system hands off the call to a neighboring system if both systems are part of a wide area seamless service agreement. Upon call termination, the MS will enter the *SERVING SYSTEM DETERMINATION* Task (2.6.3.12), which will re-scan the cellular environment before returning to the *IDLE* Task.

PROPOSED CHANGES TO THE PROCESS:

The Ad Hoc Alliance for Public Access to 9-1-1 has proposed a change to the above call process for 9-1-1 calls to be directed to a Public Safety Answering Point (PSAP) from a MS by all cellular service providers. This change is defined as a requirement for the MS to examine ALL control channels for both the A-Side and B-Side service providers to select the strongest compatible channel to process the call without regard to their preferred service provider. This change will ensure the MS user of access to the best communication path to process the emergency call. This process will also enable the locating process to more accurately report the true location of the MS when only the location of the BS cell site is being reported to the PSAP; i.e., the first five years following adoption of the new regulations. It will also reduce the probability of dropped or uncompleted calls and minimize the requirement for call-back by the PSAP.

IMPACT OF THE PROPOSAL ON THE CALL PROCESS:

Incorporating the proposed change into the MS is limited to a relatively minor software modification. The *SET ACCESS PARAMETERS* Task (2.6.3.1) is modified to examine the dialed number to determine if 9-1-1 is being called. If the user has dialed 9-1-1, this task, (2.6.3.1) is expanded to pre-load the FIRSTCHA parameter with the lowest A-Side control channel (313) and the LASTCHA parameter with the highest B-Side control channel (354) in addition to the task's normal process. As a result of this minor change, the following task, *SCAN ACCESS CHANNELS* Task (2.6.3.2) will examine **<u>ALL</u>** control channels for both the A-Side and B-Side when selecting the strongest compatible signal.

The remainder of the call process will proceed with <u>NO</u> changes required, and as a result, the user will always select the BEST compatible channel from BOTH cellular systems when calling 9-1-1. This change will NOT affect any other calls made by the user. The non-9-1-1 calls will be placed on the preferred system selected by the user.

CONCLUSION:

In summary, the proposal by the Alliance to "Seek the Strongest Compatible Signal" when placing a call to 9-1-1 is achievable with very little impact on the equipment manufacturer, while providing the benefit of the best possible reliability to the user and providing the closest cell site information to the PSAP. This proposed change will also benefit the PSAP by minimizing the probability of dropped or uncompleted calls requiring call-back by either the PSAP or the user.

AMERICAN NATIONAL STANDARD
ANSI/EIA/TIA-553-1989
APPROVED: April 19,1989

EIA/TIA STANDARD

EIA/TIA-553

Mobile Station - Land Station Compatibility Specification

EIA/TIA-553

SEPTEMBER 1989

ELECTRONIC INDUSTRIES ASSOCIATION
ENGINEERING DEPARTMENT

TELECOMMUNICATIONS INDUSTRY ASSOCIATION

2.4.2 SIGNALING TONE

Signaling tone must be 10 kHz ±1 Hz and produce a nominal frequency deviation of ±8 kHz.

2.5 MALFUNCTION DETECTION

2.5.1 MALFUNCTION TIMER

A timer separate from and independent of all other functions must be running continuously whenever power is applied to the transmitter of a mobile station. If the mobile station is software-controlled, sufficient reset commands must be interspersed throughout the mobile station logic program to ensure that the timer never expires as long as the proper sequence of operations is taking place; similar means must be provided, as appropriate, in hardware-controlled designs. If the timer expires, a malfunction must be assumed and the mobile station must be inhibited from transmitting. The maximum time allowed for expiration of the timer is 60 seconds.

This supersedes the requirement for a transmitter carrier-on indicator.

2.5.2 FALSE TRANSMISSION

A protection circuit must be provided to minimize the possibility of false transmitter operation caused by component failure within the mobile station.

2.6 CALL PROCESSING

The following sections describe mobile station operation as controlled by a land station. Frequent references are made to the corresponding sections in the land station section and to the messages that flow between a land station and a mobile station. It is helpful to read **2.6** and **3.6** in parallel and examine the message formats in **2.7** and **3.7** at the same time.

When power is applied to a mobile station, it should enter the Retrieve System Parameters Task (see **2.6.1.1**). Each task from **2.6.1.1** to **2.6.4.5** contains information describing which tasks must be entered when a given task is completed.

2.6.1 INITIALIZATION

2.6.1.1 RETRIEVE SYSTEM PARAMETERS

If the preferred system (see **2.3.10**) is System A, set the serving-system status to enabled; if the preferred system is System B, set the serving-system status to disabled.

The mobile station must then enter the Scan Dedicated Control Channels Task (see **2.6.1.1.1**).

2.6.1.1.1 SCAN DEDICATED CONTROL CHANNELS

If the serving-system status is enabled, a mobile station must examine the signal strength on each of the dedicated control channels assigned nationwide to System A. If the serving-system status is disabled, a mobile station must examine the signal strength on each of the dedicated control channels assigned nationwide to System B.

The mobile station must then enter the Update Overhead Information Task (see **2.6.1.1.2**).

2.6.1.1.2 UPDATE OVERHEAD INFORMATION

Overhead messages are sent in a group called an overhead message train (see **3.7.1.2**). The mobile station must use the value given in the NAWC (number of additional words coming) field of the system parameter overhead message in the train to determine that all messages of the train have been received. The END field must be used as a cross-check. For NAWC-counting purposes, inserted control-filler messages (see **3.7.1**) must not be counted as part of the overhead message train.

If the mobile station receives a BCH-code-correct but unrecognizable overhead message in the train, the mobile station must count that message as part of the train for NAWC-counting purposes, but must not attempt to execute the message.

The mobile station must tune to the strongest dedicated control channel and, within 3 seconds, receive a system parameter message (see **3.7.1.2**) and update the following numeric information:

- *System identification* (SID_s). Set the 14 most significant bits of SID_s to the value of the SID1 field. Set the least significant bit of SID_s to '1' if the serving-system status is enabled; otherwise, set the bit to '0'.
- *Number of paging channels* (N_s). Set N_s to 1 plus the value of the N—1 field.
- *First paging channel* ($FIRSTCHP_s$). Set $FIRSTCHP_s$ according to the following algorithm:
  - — If $SID_s = SID_p$, $FIRSTCHP_s = FIRSTCHP_p$ (see **2.3.7**).
  - — If $SID_s \neq SID_p$ and the serving-system status is enabled, set $FIRSTCHP_s$ to the first dedicated control channel for System A (834.990 MHz mobile Tx, 879.990 MHz land Tx).
  - — If $SID_s \neq SID_p$ and the serving-system status is disabled, set $FIRSTCHP_s$ to the first dedicated control channel for System B (835.020 MHz mobile Tx, 880.020 MHz land Tx).
- *Last paging channel* ($LASTCHP_s$). Set $LASTCHP_s$ according to the following algorithm:
  - — If the serving-system status is enabled, $LASTCHP_s = FIRSTCHP_s - N_s + 1$.
  - — If the serving-system status is disabled, $LASTCHP_s = FIRSTCHP_s + N_s - 1$.

If the mobile station is equipped for autonomous registration, the mobile station must:

- Set registration increment ($REGINCR_s$) to its default value of 450.
- Set the first registration ID status to enabled.

The mobile station must then enter the Paging Channel Selection Task (see **2.6.1.2**).

If the mobile station cannot complete this task on the strongest dedicated control channel, it may tune to the second strongest dedicated control channel and attempt to complete this task within a second 3-second interval. If it cannot complete this task on either of the two strongest control channels, the mobile station may check the serving-system status: If the serving-system status is enabled, it may be disabled; if the serving-system status is disabled, it may be enabled. The mobile station must then enter the Scan Dedicated Control Channels Task (see **2.6.1.1.1**).

2.6.1.2 PAGING CHANNEL SELECTION

2.6.1.2.1 SCAN PAGING CHANNELS

The mobile station must examine the signal strength on each of channels $FIRSTCHP_s$ to $LASTCHP_s$ (see **2.6.1.1.2**).

The mobile station must then enter the Verify Overhead Information Task (see **2.6.1.2.2**).

2.6.1.2.2 VERIFY OVERHEAD INFORMATION

The mobile station must set the Wait-for-Overhead-Message bit ($WFOM_s$) to '0'; the mobile station must then tune to the strongest paging channel and, within 3 seconds, receive an overhead message train (see **3.7.1.2**) and update the following:

- *System identification:* Set the 14 most significant bits of SID_r to the value of the SID1 field. Set the least significant bit of SID_r to '1' if the serving-system status is enabled; otherwise, set the bit to '0'.

- *ROAM status:* The mobile station must compare the received system identification (SID_r) with the stored system identification (SID_s). If $SID_r = SID_s$, the mobile station must compare SID_s with SID_p. If $SID_p = SID_s$, the mobile station must set the ROAM status to disabled. If $SID_p \neq SID_s$, the mobile station must set the ROAM status to enabled. If $SID_r \neq SID_s$, the mobile station must enter the Retrieve System Parameters Task (see **2.6.1.1**).
- *Local control status:* If the local control option is enabled within the mobile station (see **2.3.9**) and the bits of the home system identification (SID_p) that comprise the group identification match the corresponding bits of SID_s, then the local control status must be enabled. Otherwise, the local control status must be disabled.

The mobile station must then enter the Response to Overhead Information Task (see **2.6.2.1**).

If the mobile station cannot complete this task on the strongest paging channel, it may tune to the second strongest paging channel and attempt to complete this task within a second 3-second interval. If it cannot complete this task on either of the two strongest paging channels, the mobile station may check the serving-system status: If the serving-system status is enabled, it may be disabled; if the serving-system status is disabled, it may be enabled. The mobile station must then enter the Scan Dedicated Control Channels Task (see **2.6.1.1.1**).

2.6.2 IDLE

During the Idle Task, a mobile station must execute each of the following four (sub)tasks (see **2.6.2.1, 2.6.2.2, 2.6.2.3**, and **2.6.2.4**) at least every 46.3 ms, the periodicity of word blocks on the forward control channel. If the mobile station is not listening to a control channel of the preferred system, it may exit this task and enter the Retrieve System Parameters Task (see **2.6.1.1**).

2.6.2.1 RESPONSE TO OVERHEAD INFORMATION

Whenever a mobile station receives an overhead message train (see **3.7.1.2**), the mobile station must compare SID_s with SID_r. If $SID_s \neq SID_r$, the mobile station must exit the Idle Task and enter the Initialization Task (see **2.6.1**).

If $SID_s = SID_r$, the mobile station must update the following numeric values using information contained in the system parameter overhead message:

- *Serial number bit* (S_s): Set S_s to the value in the S field.
- *Registration bit* (R_s): If the roam status is disabled, set R_s to the value of the REGH field; if the roam status is enabled, set R_s to the value of the REGR field.
- *Extended address bit* (E_s): Set E_s to the value in the E field.
- *Discontinuous transmission bit* (DTX_s): Set DTX_s to the value of the DTX field.
- *Number of paging channels* (N_s): Set N_s to 1 plus the value of the N—1 field.
- *Read-control-filler bit* (RCF_s): Set RCF_s to the value of the RCF field.
- *Combined paging/access bit* (CPA_s): Set CPA_s to the value of the CPA field.
- *Number of access channels* ($CMAX_s$): Set $CMAX_s$ to 1 plus the value of the CMAX—1 field.
- Determine control channel boundaries for accessing the system ($FIRSTCHA_s$ and $LASTCHA_s$) by using the following algorithm:
  - — If the serving-system status is enabled,
    - + If $CPA_s = 1$, set $FIRSTCHA_s$ to the first dedicated control channel for System A (834.990 MHz mobile Tx, 879.990 MHz land Tx).

  + If $CPA_s=0$, set $FIRSTCHA_s$ to the value of the first dedicated control channel for System A minus N_s.
  + $LASTCHA_s = FIRSTCHA_s - CMAX_s + 1$.
- — If the serving-system status is disabled,
  + If $CPA_s=1$, set $FIRSTCHA_s$ to the first dedicated control channel for System B (835.020 MHz mobile Tx, 880.020 MHz land Tx).
  + If $CPA_s=0$, set $FIRSTCHA_s$ to the value of the first dedicated control channel for System B plus N_s.
  + $LASTCHA_s = FIRSTCHA_s + CMAX_s - 1$.

The mobile station must then respond as indicated to each of the following messages, if received in the overhead message train. The order in which the mobile station must respond to the messages, if two or more are received, is given by their order in the following list:

1. *Local Control Messages*: If the local control status is enabled (see **2.6.1.2.2**) the mobile station must respond to the local control messages.
2. *New Access Channel Set Message*:
   - The mobile station must set $FIRSTCHA_s$ to the value of the NEWACC field of the message.
   - The mobile station must set $LASTCHA_s$ according to the following algorithm:
     - — If the serving-system status is enabled, $LASTCHA_s = NEWACC_T - CMAX_s + 1$.
     - — If the serving-system status is disabled, $LASTCHA_s = NEWACC_T + CMAX_s - 1$.
3. *Registration Increment Message*: If the mobile station is equipped for autonomous registration, the mobile station must set $REGINCR_s$ to the value of the REGINCR field in the message.
4. *Registration ID Message*: If the mobile station is equipped for autonomous registration, the mobile station must perform the following:
   - The mobile station must set $REGID_s$ to the value of the REGID field of the received message and set the first-registration ID status to disabled (see **2.6.1.1.2**).
   - If SID_s equals the $SID_{s\text{-}p}$ value stored in the registration memory, the mobile station must perform the following:
     - — The mobile station must use the following (or an equivalent) algorithm to review the $NXTREG_{s\text{-}p}$ associated with the $SID_{s\text{-}p}$ to determine if $REGID_s$ has cycled through zero:
       + If $NXTREG_{s\text{-}p}$ is greater than or equal to $REGID_s + REGINCR_s + 5$, then $NXTREG_{s\text{-}p}$ must be replaced by the greater of 0 and the value $NXTREG_{s\text{-}p} - 2^{20}$.
       + Otherwise do not change $NXTREG_{s\text{-}p}$.
     - — The mobile station must then compare $REGID_s$ with the $NXTREG_{s\text{-}p}$ associated with the $SID_{s\text{-}p}$.
       + If $REGID_s$ is greater than or equal to $NXTREG_{s\text{-}p}$ and autonomous registration is enabled, the mobile station must enter the System Access Task with a "registration" indication (see **2.6.3**).
       + If $REGID_s$ is greater than or equal to $NXTREG_{s\text{-}p}$ and autonomous registration is not enabled, then set $NXTREG_{s\text{-}p}$ equal to $REGID_s$.

+ Otherwise, the mobile station must ignore the message and continue to process messages in the overhead message train.

- If SID_s is not equal to the SID_{s-p} value stored in the registration memory, the mobile station must perform the following:
  - — If autonomous registration is enabled, the mobile station must exit this task and enter the System Access Task with a "registration" indication supplied (see **2.6.3**).
  - — Otherwise, the mobile station must ignore the message and continue to process messages in the overhead message train.

5. *Rescan Message*: The mobile station must immediately exit this task and enter the Initialization Task (see **2.6.1**).
6. *Any Other Message*: Ignore message.

2.6.2.2 PAGE MATCH

The mobile station must monitor mobile station control messages for page messages (see **3.7.1.1**).

- If the ROAM status is disabled, the mobile station must attempt to match $MIN1_p$ to $MIN1_r$ for one-word messages and both $MIN1_p$ and $MIN2_p$ to $MIN1_r$ and $MIN2_r$, respectively, for two-word messages. All decoded MIN bits must match to cause the mobile station to respond to the message.
- If the ROAM Status is enabled, the mobile station must attempt to match both $MIN1_p$ and $MIN2_p$ to $MIN1_r$ and $MIN2_r$, respectively. All decoded MIN bits must match to cause the mobile station to respond to the order.

When a match occurs, the mobile station must enter the System Access Task with a "page response" indication (see **2.6.3**).

2.6.2.3 ORDER

The mobile station must monitor mobile station control messages for orders and must attempt to match both $MIN1_p$ and $MIN2_p$ to $MIN1_r$ and $MIN2_r$, respectively. All decoded MIN bits must match to cause the mobile station to respond to the order. The responses to the following orders are:

- *Audit order*: The mobile station must enter the System Access Task (see **2.6.3**) with an "order" indication.
- *Local control order*: The action to be taken depends on the local control field.
- *Any other order*: Ignore order.

2.6.2.4 CALL INITIATION

When the user desires to initiate a call, the System Access Task (see **2.6.3**) must be entered with an "origination" indication.

2.6.2.5 NON-AUTONOMOUS REGISTRATION INITIATION

If $R_s = 1$, the mobile station may initiate a non-autonomous registration by entering the System Access Task (see **2.6.3**) with a "registration" indication.

2.6.3 SYSTEM ACCESS

2.6.3.1 SET ACCESS PARAMETERS

When the System Access Task is started, a timer, called the access timer, must be set as follows:

- If this is an origination, to a maximum of 12 seconds.
- If this is a page response, to a maximum of 6 seconds.
- If this is an order response, to a maximum of 6 seconds.
- If this is a registration, to a maximum of 6 seconds.

The mobile station must set the last-try code (LT_s) to '0' and then enter the Scan Access Channels Task (see **2.6.3.2**).

2.6.3.2 SCAN ACCESS CHANNELS

The mobile station must examine the signal strength on each of the channels $FIRSTCHA_s$ to $LASTCHA_s$ and choose up to two channels with the strongest signals. See **2.6.2.1** Response to Overhead Information Task for access channel set determination.

The mobile station must then tune to the strongest access channel and enter the Retrieve Access Attempts Parameters Task (see **2.6.3.3**).

2.6.3.3 RETRIEVE ACCESS ATTEMPT PARAMETERS

The mobile station must set the maximum-number-of-seizure-attempts allowed ($MAXSZTR_{sl}$) to a maximum of 10, and the maximum-number-of-busy-occurrences ($MAXBUSY_{sl}$) to a maximum of 10.

The mobile station must then initialize the following to zero:

- Number of busy occurrences ($NBUSY_{sv}$)
- Number of unsuccessful seizure attempts ($NSZTR_{sv}$)

The mobile station must then examine the read control-filler bit (RCF_s).

- If $RCF_s=0$, the mobile station must then within 400 ms (+100 ms, —0 ms) set DCC_s to the value in the DCC field of a received message and set the power level (PL_s) to 0.
- If $RCF_s=1$, the mobile station must then within 1000 ms (+100 ms, —0 ms) read a control-filler message, set DCC_s and $WFOM_s$ to the values in the DCC and WFOM fields of the message, respectively, and set PL_s to the power level given by Table 2.1.2-1 for the value of the CMAC field of the message and the mobile station power class (see **2.1.2.2**, **2.3.3**, and **3.7.1.2.4**).

If the DCC field or the control-filler message is not received within the time allowed, then the mobile station must examine the access timer. If the access timer has expired, the mobile station must enter the Serving-System Determination Task (see **2.6.3.12**). If the access timer has not expired, the mobile station must enter the Alternate Access Channel Task (see **2.6.3.13**).

The mobile station must then set BIS_s to '1' and examine the $WFOM_s$ bit.

- If $WFOM_s$ = 1, the mobile station must enter the Update Overhead Information Task (see **2.6.3.4**).
- If $WFOM_s$ = 0, the mobile station must wait a random delay. Each time it waits a random delay, a different random delay must be generated with the time uniformly distributed in the interval 0 to 92 ±1 ms and, if quantized, with granularity no more than 1 ms. The mobile station must then enter the Seize Reverse Control Channel Task (see **2.6.3.5**).

2.6.3.4 UPDATE OVERHEAD INFORMATION

If this task is not completed within 1.5 seconds, the mobile station must exit this task and enter the Serving-System Determination Task (see **2.6.3.12**). If the Update Overhead Information Task is completed, the mobile station must enter the Seize Reverse Control Channel Task (see **2.6.3.5**)

The mobile station must receive an overhead message train (see **3.7.1.2**) and act as indicated below in response to the following global action messages, if received in the overhead message train:

- *Overload Control Message*.
  - — If this access is an origination, the mobile station must examine the value of the overload class field (OLC) identified by $ACCOLC_p$. If the identified OLC field is set to '0', the mobile station must exit this task and enter the Serving-System Determination Task (see **2.6.3.12**); if the identified OLC field is set to '1', the mobile station must continue to respond to messages in the overhead message train.
  - — Otherwise, the mobile station must continue to respond to messages in the overhead message train.
- *Access Type Parameters Message*: The busy-idle status bit (BIS_s) must be set to the value of the BIS field of the received message.
- *Access Attempt Parameters Message*: The mobile station must update the following parameters:
  - — If this access is a page response,
    - + Maximum number of seizure tries allowed ($MAXSZTR_{sl}$) must be set to the value of the MAXSZTR-PGR field of the received message.
    - + Maximum number of busy occurrences allowed ($MAXBUSY_{sl}$) must be set to the value of the MAXBUSY-PGR field of the received message.
  - — Otherwise,
    - + Maximum number of seizure tries allowed ($MAXSZTR_{sl}$) must be set to the value of the MAXSZTR-OTHER field of the received message.
    - + Maximum number of busy occurrences allowed ($MAXBUSY_{sl}$) must be set to the value of the MAXBUSY-OTHER field of the received message.

  After the overhead message train is received and processed as required above, the mobile station must wait a random time. Each time this task is executed, a different random delay must be generated, distributed uniformly in the interval 0 to 750 ms, and if quantized, with granularity no greater than 1 ms. At the end of the delay, the mobile station must enter the Seize Reverse Control Channel Task (see **2.6.3.5**).

Due to evolving network requirements, the subsequent modification to the rescan procedure represents a strongly recommended enhancement.

2.6.3.4 UPDATE OVERHEAD INFORMATION

If this task is not completed within 1.5 seconds, the mobile station must exit this task and enter the Serving-System Determination Task (see **2.6.3.12**). If the Update Overhead Information Task is completed, the mobile station must enter the Seize Reverse Control Channel Task (see **2.6.3.5**)

The mobile station must receive an overhead message train (see **3.7.1.2**).

If the access is a registration access, the mobile station shall perform the following:

- Update System identification (SIDr). Set the 14 most significant bits of SIDr to the value of the SID1 field. Set the least significant bit of SIDr to "1" if the serving-system status is enabled; otherwise, set the bit to "0".
- The mobile station must then compare SIDr with SIDs. If SIDr ≠ SIDs, the mobile station must exit the Update Overhead Information task and enter the Serving System

Determination Task (see **2.6.3.12**). Otherwise, the mobile station shall continue to process this task.

The mobile station must act as indicated below in response to the following global action messages, if received in the overhead message train:

- *Overload Control Message*.
  - — If this access is an origination, the mobile station must examine the value of the overload class field (OLC) identified by $ACCOLC_p$. If the identified OLC field is set to '0', the mobile station must exit this task and enter the Serving-System Determination Task (see **2.6.3.12**); if the identified OLC field is set to '1', the mobile station must continue to respond to messages in the overhead message train.
  - — Otherwise, the mobile station must continue to respond to messages in the overhead message train.
- *Access Type Parameters Message*: The busy-idle status bit (BIS_s) must be set to the value of the BIS field of the received message.
- *Access Attempt Parameters Message*: The mobile station must update the following parameters:
  - — If this access is a page response,
    - + Maximum number of seizure tries allowed ($MAXSZTR_{sl}$) must be set to the value of the MAXSZTR-PGR field of the received message.
    - + Maximum number of busy occurrences allowed ($MAXBUSY_{sl}$) must be set to the value of the MAXBUSY-PGR field of the received message.
  - — Otherwise,
    - + Maximum number of seizure tries allowed ($MAXSZTR_{sl}$) must be set to the value of the MAXSZTR-OTHER field of the received message.
    - + Maximum number of busy occurrences allowed ($MAXBUSY_{sl}$) must be set to the value of the MAXBUSY-OTHER field of the received message.

If the access is a registration access, the mobile station must respond as indicated to the registration identification message, if received in the overhead message train:

- The mobile station must set $REGID_s$ to the value of the REGID field in the message.

After the overhead message train is received and processed as required above, the mobile station must wait a random time. Each time this task is executed, a different random delay must be generated, distributed uniformly in the interval 0 to 750 ms, and if quantized, with granularity no greater than 1 ms. At the end of the delay, the mobile station must enter the Seize Reverse Control Channel Task (see **2.6.3.5**).

2.6.3.5 SEIZE REVERSE CONTROL CHANNEL

The mobile station must read the busy-idle status of the channel.

- If the channel is busy, the mobile station must increment $NBUSY_{sv}$ by 1.
  - — If $NBUSY_{sv}$ exceeds $MAXBUSY_{sl}$, then the mobile station must exit this task and enter the Serving-System Determination Task (see **2.6.3.12**).
  - — If $NBUSY_{sv}$ does not exceed $MAXBUSY_{sl}$, then the mobile station must exit this task and the Delay After Failure Task must be executed (see **2.6.3.6**).
- If the channel is idle, then the mobile station must set $NBUSY_{sv}$ to zero, turn on the transmitter at the power level indicated by PL_s (see **2.6.3.3** and **2.1.2.2**), wait the proper

RECEIVED

SEP 23 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

GREATER ATLANTA
CELLULAR SYSTEM SURVEY

On August 10, 1996, a Cellular System coverage survey was conducted in Atlanta, GA. This survey included two hundred seventy five square miles of area encompassing portions of Decalb, Gwinnett and Fulton counties. The survey was performed at the request of the Ad Hoc Alliance for Public Access to 9-1-1.

The results of this survey point out and document the dramatic difference in the coverage of the competing A-Side and B-Side cellular carriers. Attached are maps depicting the route travelled during this survey with measurement locations marked and numbered. The actual measurements were captured by an LCC MSAT cellular system test set and printed out in real time.

The results of these printouts have then been graphed to illustrate the best available signal at each of the twenty-nine locations and to emphasize the "Difference" in decibels between the two systems. Every four decibels of difference represents a "DOUBLING" of the available signal power. Many of the sites shown have a difference level in excess of forty decibels (1024 times more signal) with several in excess of fifty-two decibels (8192 times more signal).

Although this survey was not exhaustive, it demonstrates that there is a very dramatic difference in the coverage of the competing cellular systems in the greater Atlanta market.

GREATER ATLANTA
CELLULAR SYSTEM SURVEY

LOCATION		MEASUREMENTS
MAP	**IDENT.**	

1 **1**

Talbot St. & Ascot Lane
Roswell, GA

MARKER 5 07:52:26 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
314	02	-103	349	16	-90
330	18	-104	347	14	-103
320	08	-106	341	08	-104
324	12	-108	336	03	-105
313	01	-109	338	05	-106
323	11	-110	340	07	-109

1 **2**

Millbank & Ascot Lane
Roswell, GA

MARKER 6 07:57:03 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
330	18	-92	349	16	-105
327	15	-102	338	05	-109
331	19	-104	341	08	-109
314	02	-105	347	14	-109
318	06	-109	342	09	-109
320	08	-110	352	19	-111

MARKER 7 07:57:08 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
330	18	-95	349	16	-90
327	15	-103	341	08	-96
318	06	-103	338	05	-103
314	02	-103	342	09	-109
320	08	-106	346	13	-112
325	13	-106	340	07	112

1 **3**

Mt. Pisgah Church
Nesbit Ferry Road
Alpharetta, GA

MARKER 8 08:02:19 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
330	18	-90	349	16	-65
325	13	-97	343	10	-92
320	08	-98	350	17	-95
318	06	-100	341	08	-97
314	02	-101	348	15	-97
323	11	-103	346	13	-98

1 **4**

Nesbit Lakes & Nesbit Ferry Road
Alpharetta, GA

MARKER 9 08:03:44 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
330	18	-91	349	16	-52
314	02	-93	350	17	-83
331	19	-94	348	15	-84
318	06	-96	341	08	-94
327	15	-96	336	03	-95
319	07	-97	338	05	-99

1 **5**

Scott Road & Nesbit Ferry Road
Alpharetta, GA

MARKER 10 08:04:38 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
331	19	-79	349	16	-44
325	13	-80	350	17	-71
313	01	-83	348	15	-74
318	06	-87	342	09	-85
330	18	-87	340	07	-87
320	08	-88	346	13	-88

MARKER 11 08:05:35 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
318	06	-80	349	16	-31
331	19	-82	350	17	-64
326	14	-85	348	15	-68
330	18	-89	342	09	-08
325	13	-89	340	07	-89
328	16	-90	341	08	-91

GREATER ATLANTA
CELLULAR SYSTEM SURVEY

LOCATION MAP	LOCATION IDENT.	MEASUREMENTS

1 / **6**

Nesbit Ferry Road & Abbottswell
Alpharetta, GA

MARKER 12 08:06:31 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
315	03	-77	349	16	-38
320	08	-88	350	17	-70
331	19	-88	348	15	-72
318	06	-89	342	09	-91
330	18	-91	353	20	-93
326	14	-91	341	08	-93

1 / **7**

Nesbit Ferry Road
Alpharetta, GA

MARKER 13 08:07:05 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
313	01	-83	349	16	-35
326	14	-87	350	17	-68
331	19	-89	348	15	-69
325	13	-91	341	08	-85
314	02	-91	337	04	-92
332	20	-91	343	10	-93

MARKER 14 08:07:14 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
313	01	-82	349	16	-35
318	06	-88	350	17	-67
326	14	-88	348	15	-69
314	02	-88	341	08	-87
325	13	-88	336	03	-91
331	19	-89	343	10	-92

1 / **8**

Nesbit Ct. & Nesbit Ferry Road
Alpharetta, GA

MARKER 15 08:07:20 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
313	01	-83	349	16	-31
326	14	-87	350	17	-66
331	19	-87	348	15	-68
318	06	-88	341	08	-84
325	13	-88	336	03	-88
314	02	-90	345	12	-91

MARKER 16 08:07:24 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
313	01	-82	349	16	-31
331	19	-84	350	17	-66
326	14	-86	348	15	-68
318	06	-88	341	08	-83
325	13	-89	336	03	-87
332	20	-90	345	12	-91

2 / **9**

Nesbit Ferry Rd & Holcomb Bridge Rd
Roswell, GA

MARKER 17 08:11:50 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
331	19	-60	349	16	-98
332	20	-87	337	04	-101
330	18	-96	348	15	-103
320	08	-97	343	10	-105
326	14	-104	345	12	-108
329	17	-105	342	09	-109

GREATER ATLANTA
CELLULAR SYSTEM SURVEY

LOCATION — **MAP** / **IDENT.** | **MEASUREMENTS**

MAP: 2 **IDENT.:** 10

Rivermont Shopping Center
Roswell, GA

MARKER 18 08:17:24 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
331	19	-43	349	16	-91
332	20	-72	341	08	-95
330	18	-74	353	20	-98
313	01	-95	337	04	-100
315	03	-97	340	07	-100
314	02	-100	342	09	-102

MAP: 2 **IDENT.:** 11

Rivermont Shopping Cemter
Roswell, GA

MARKER 19 08:18:56 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
331	19	-31	349	16	-82
332	20	-68	344	11	-82
330	18	-69	348	15	-88
315	03	-86	337	04	-90
313	01	-93	353	20	-94
319	07	-97	345	12	-94

MARKER 20 08:19:49 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
331	19	-35	349	16	-70
332	20	-68	337	04	-89
330	18	-71	344	11	-89
315	03	-88	345	12	-94
314	02	-99	350	17	-95
329	17	-101	348	15	-96

MAP: 2 **IDENT.:** 12

Rivermont Shopping Center
Roswell, GA

MARKER 21 08:20:08 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
331	19	-35	349	16	-80
332	20	-68	348	15	-85
330	18	-70	344	11	-87
315	03	-84	337	04	-87
326	14	-91	345	12	-95
314	02	-97	350	17	-98

MARKER 22 08:20:26 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
331	19	-31	349	16	-77
332	20	-67	348	15	-85
330	18	-71	344	11	-87
315	03	-83	337	04	-88
326	14	-93	340	07	-98
321	09	-98	345	12	-98

MARKER 23 08:20:31 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
331	19	-31	349	16	-78
332	20	-67	348	15	-85
330	18	-71	344	11	-87
315	03	-84	337	04	-88
326	14	-93	340	07	-98
321	09	-98	345	12	-98

MAP: 3 **IDENT.:** 13

Holcomb Bridge Rd & Spalding Rd
Norcross, GA

MARKER 24 08:26:24 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
331	19	-80	337	04	-31
326	14	-91	338	05	-66
315	03	-93	336	03	-68
320	08	-96	342	09	-75
313	01	-104	353	20	-93
327	15	-104	349	16	-93

GREATER ATLANTA
CELLULAR SYSTEM SURVEY

LOCATION			MEASUREMENTS
MAP	**IDENT.**		

3 **14**

Spalding Shopping Center
Spalding Rd
Norcross, GA

MARKER 26 08:27:39 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
331	19	-82	337	04	-35
326	14	-85	338	05	-67
320	08	-95	336	03	-69
315	03	-96	342	09	-83
332	20	-99	349	16	-86
327	15	-103	348	15	-94

3 **15**

Deer Hollow & Spalding Rd.
Norcross, GA

MARKER 27 08:27:53 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
331	19	-86	337	04	-31
326	14	-87	338	05	-66
320	08	-91	336	03	-68
315	03	-91	349	16	-84
330	18	-99	342	09	-90
332	20	-100	353	20	-93

MARKER 28 08:27:58 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
331	19	-83	337	04	-31
326	14	-88	338	05	-66
315	03	-89	336	03	-68
320	08	-91	349	16	-84
330	18	-99	342	09	-91
332	20	-102	353	20	-94

3 **16**

Dunwoody Club & Mt. Vernon Rd
Dunwoody, GA

MARKER 29 08:43:50 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
321	09	-67	353	20	-48
313	01	-84	354	21	-76
323	11	-87	352	19	-79
315	03	-92	336	03	-89
322	10	-93	340	07	-90
318	06	-93	338	05	-92

3 **17**

Jett Ferry Rd & Mt. Vernon Rd
Dunwoody, GA

MARKER 30 08:45:27 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
321	09	-78	353	20	-55
313	01	-87	352	19	-84
326	14	-87	354	21	-84
327	15	-93	342	09	-90
320	08	-93	348	15	-91
329	17	-94	337	04	-93

4 **18**

Manhasset & Mt. Vernon Rd
Dunwoody, GA

MARKER 31 08:50:48 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
327	15	-51	350	17	-83
318	06	-55	353	20	-85
328	16	-75	336	03	-87
329	17	-79	340	07	-88
319	07	-80	349	16	-89
324	12	-81	339	06	-89

MARKER 32 08:50:52 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
327	15	-53	339	06	-85
318	06	-62	338	05	-89
328	16	-78	347	14	-89
329	17	-83	345	12	-89
326	14	-85	353	20	-91
315	03	-88	350	17	-92

GREATER ATLANTA
CELLULAR SYSTEM SURVEY

LOCATION		MEASUREMENTS
MAP	**IDENT.**	

4 **19**

Vernon Oaks & Vernon Springs
Dunwoody, GA

MARKER 34 08:58:13 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
▸ 318	06	-44	350	17	-90
327	15	-65	347	14	-91
319	07	-71	338	05	-92
317	05	-75	342	09	-92
314	02	-83	336	03	-93
326	14	-90	349	16	-94

MARKER 35 08:59:09 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
▸ 318	06	-46	350	17	-93
327	15	-61	349	16	-94
319	07	-72	339	06	-94
317	05	-75	338	05	-96
329	17	-77	340	07	-97
315	03	-83	342	09	-97

4 **20**

Vernon Oaks & Mt. Vernon Rd
Dunwoody, GA

MARKER 36 08:59:54 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
▸ 318	06	-35	353	20	-88
327	15	-55	336	03	-90
319	07	-68	337	04	-90
317	05	-70	343	10	-92
328	16	-79	342	09	-93
313	01	-83	350	17	-93

MARKER 37 09:00:46 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
▸ 318	06	-38	339	06	-86
327	15	-58	336	03	-86
319	07	-69	340	07	-8[illegible]
317	05	-70	350	17	-91
313	01	-79	343	10	-93
315	03	-82	351	18	-94

MARKER 38 09:00:50 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
▸ 318	06	-38	339	06	-86
327	15	-59	336	03	-87
319	07	-68	340	07	-89
317	05	-72	350	17	-90
313	01	-79	342	09	-91
315	03	-82	353	20	-93

5 **21**

Dunwoody MARTA Station
Hammond Drive
Dunwoody, GA

MARKER 39 09:14:13 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
▸ 315	03	-77	343	10	-41
323	11	-83	344	11	-68
332	20	-88	342	09	-71
331	19	-89	337	04	-75
321	09	-89	353	20	-79
325	13	-90	345	12	-83

5 **22**

Perimeter Ctr. Pky & Hammond Dr.
Dunwoody, GA

MARKER 40 09:14:50 08-10-96

A BAND CHAN	GRP	DBM	B BAND CHAN	GRP	DBM
▸ 315	03	-66	343	10	-43
323	11	-78	344	11	-71
332	20	-79	342	09	-74
331	19	-86	345	12	-76
321	09	-90	336	03	-82
319	07	-91	337	04	-87

GREATER ATLANTA
CELLULAR SYSTEM SURVEY

LOCATION		MEASUREMENTS
MAP	**IDENT.**	

5 **23**

Ashford Dunwoody & Ashwood Pky
Dunwoody, GA

MARKER 41 09:15:42 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
323	11	-83	343	10	-39
315	03	-84	344	11	-68
332	20	-86	342	09	-70
325	13	-88	336	03	-81
331	19	-88	345	12	-85
321	09	-91	353	20	-85

5 **24**

Ashford Dunwoody & Fork Dr.
Dunwoody, GA

MARKER 42 09:20:40 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
322	10	-44	335	02	-80
332	20	-66	337	04	-90
323	11	-71	353	20	-90
324	12	-75	342	09	-90
321	09	-75	351	18	-91
331	19	-85	347	14	-94

MARKER 43 09:20:59 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
322	10	-41	337	04	-80
332	20	-55	335	02	-81
323	11	-70	350	17	-83
315	03	-72	347	14	-87
321	09	-74	348	15	-89
329	17	-78	351	18	-91

5 **25**

Ashford Dunwoody & Valley View
Dunwoody, GA

MARKER 44 09:21:53 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
322	10	-41	335	02	-83
332	20	-54	345	12	-87
323	11	-70	350	17	-90
321	09	-72	353	20	-93
324	12	-76	337	04	-96
333	21	-82	347	14	-96

6 **26**

Dunwoody Village Shopping Center
Chamblee Dunwoody Road
Dunwoody, GA

MARKER 45 09:50:59 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
317	05	-66	352	19	-89
332	20	-83	341	08	-89
313	01	-87	339	06	-91
318	06	-88	338	05	-94
324	12	-92	335	02	-94
323	11	-93	340	07	-95

6 **27**

Chamblee Dunwoody Rd & Center
Dunwoody, GA

MARKER 46 09:53:43 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
317	05	-48	335	02	-85
318	06	-73	337	04	-95
316	04	-79	352	19	-100
324	12	-92	342	09	-103
332	20	-93	345	12	-103
329	17	-94	349	16	-103

6 **28**

Roberts Road & Fairfield
Dunwoody, GA

MARKER 47 09:54:52 08-10-96

A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
317	05	-59	335	02	-91
316	04	-84	353	20	-93
318	06	-86	339	06	-95
314	02	-92	345	12	-99
313	01	-93	352	19	-101
323	11	-96	342	09	-101

GREATER ATLANTA
CELLULAR SYSTEM SURVEY

LOCATION

MAP	**IDENT.**
6	**29**

Roberts Road & Glenrich Drive
Dunwoody, GA

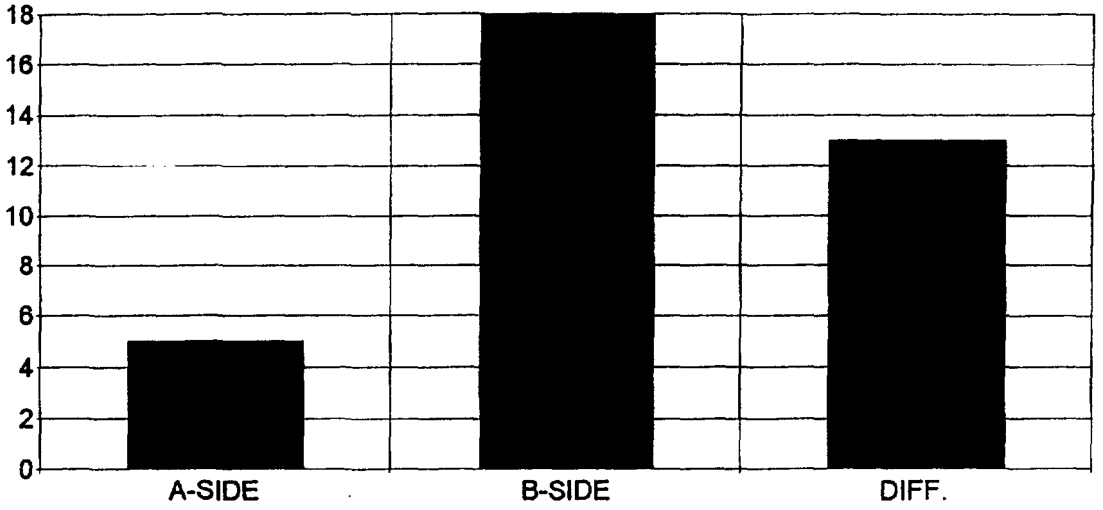
MEASUREMENTS

MARKER 48 09:56:29 08-10-96

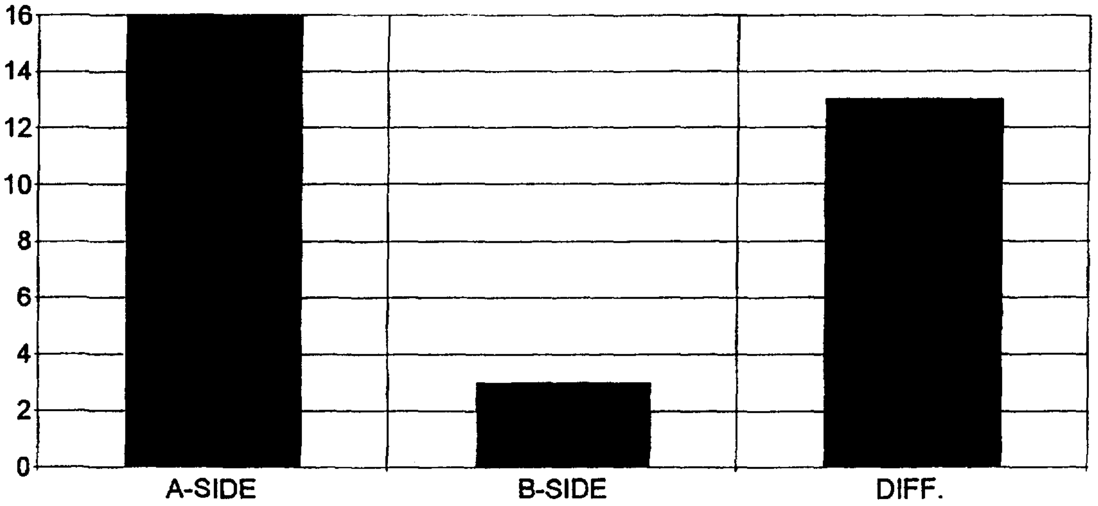
A BAND			B BAND		
CHAN	GRP	DBM	CHAN	GRP	DBM
▸ 313	01	-81	350	17	-98
314	02	-100	353	20	-101
323	11	-102	340	07	-103
324	12	-104	352	19	-104
329	17	-105	341	08	-111
327	15	-106	336	03	-111

GREATER ATLANTA
CELLULAR SYSTEM SURVEY

MAP 1 LOCATION 1

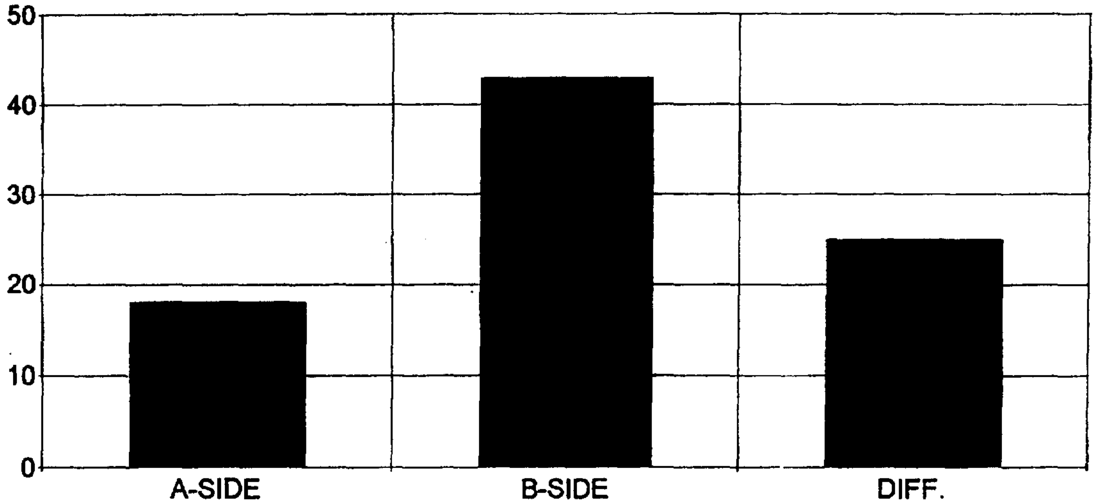


MAP 1 LOCATION 2

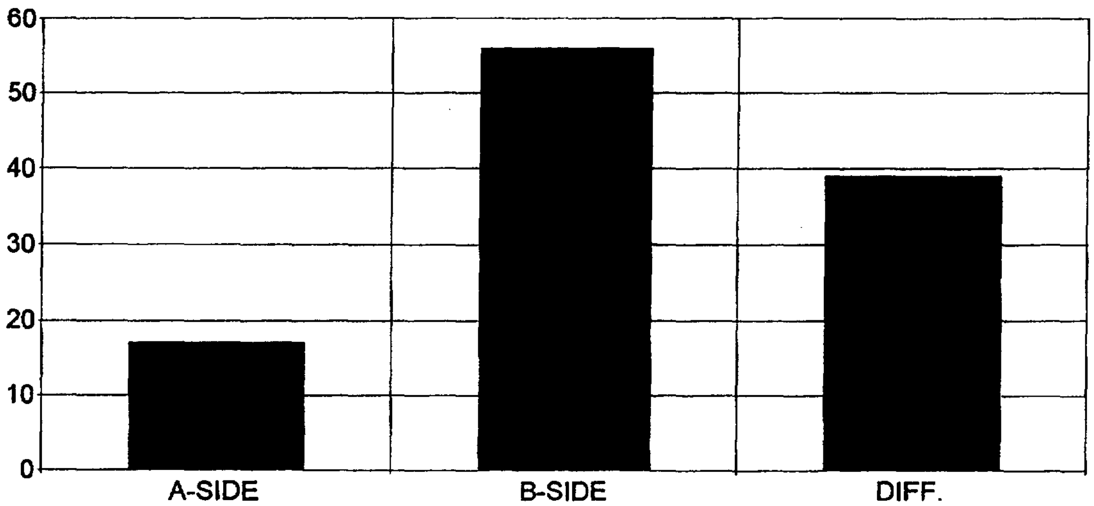


GREATER ATLANTA
CELLULAR SYSTEM SURVEY

MAP 1 LOCATION 3

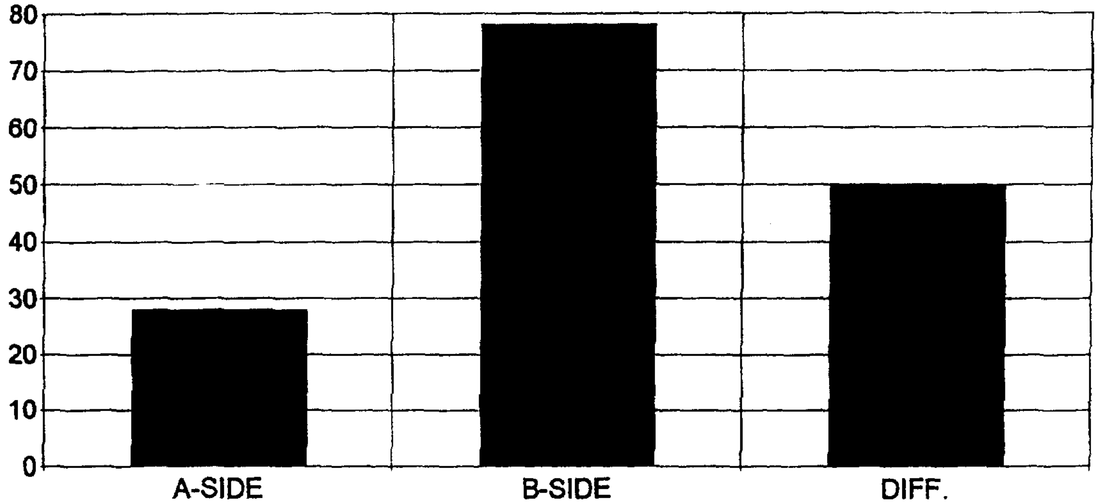


MAP 1 LOCATION 4



GREATER ATLANTA
CELLULAR SYSTEM SURVEY

MAP 1 LOCATION 5



MAP 1 LOCATION 6